

REMARKS

Claims 13, 15, 17, 19 and 21-32 are pending in this application. By this Amendment, claims 13, 21, 25 and 26 are amended. Support for the amendment to claim 13 is found at least in original claim 14. Claims 21, 25 and 26 are amended to correct an informality. No new matter is added by these amendments. Claims 14, 16, 18 and 20 are canceled without prejudice to, or disclaimer of, the subject matter recited in those claims. Reconsideration of the application based upon the above amendments and the following remarks is respectfully requested.

The Office Action, on page 2, rejects claims 13-21 and 23 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,117,231 to Fusegawa et al. (hereinafter "Fusegawa"). Claims 22 and 24 are rejected, on page 5, under 35 U.S.C. §103(a) as being unpatentable over Fusegawa in view of U.S. Patent No. 7,077,726 to Pietsch et al. (hereinafter "Pietsch"). Claims 13-21, 23 and 25-32 are rejected, on page 8, under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,200,384 to Kishida et al. (hereinafter "Kishida"), or, in the alternative, under 35 U.S.C. §103(a) as being unpatentable over Kishida in view of Fusegawa. Applicants respectfully traverse these rejections.

Claim 13 recites, among other features, that the interval of striations is in a range of 1.5 mm or less or 2.3 mm or more in a plane perpendicular to an axis of crystal growth. At least this feature cannot reasonably be considered to be taught, or to have been suggested, by the applied references.

The Office Action concedes, on page 4 and on page 9, that the "interval of striation control range of 1.5 mm or less or 2.3 mm or more," is not taught in the applied references. However, the Office Action asserts that this feature is read as a process technique step imposed on the creating of the product. This conclusion is incorrect. Claim 13 positively recites a physical feature of the single crystal. Even if considered a process step, such a

process step of controlling an interval of striations imparts a "distinctive structural characteristic to the final product." *In re Garnero*, 412 F.2d 276, 279 (CCPA 1979). This distinctive structural characteristic is not taught by the applied references.

Claim 25 recites that a growth rate and/or a temperature fluctuation period are controlled so that $V \times F / \sin \theta$ is in a certain range when a growth rate at the time of growing a single crystal is defined as V (mm/min), a temperature fluctuation period of crystal melt is defined as F (min), and an angle to the level surface of a crystal-growth interface is defined as θ . At least this feature cannot reasonably be considered to be taught, nor would it have been suggested, in Kishida and or Fusegawa.

The Office Action, on page 11, asserts that Kishida inherently satisfies the method of growing the material to satisfy $V \times F / \sin \theta$ being in a certain range. This assertion is incorrect. Instead, Kishida teaches in col. 2, lines 39-44, a method for stabilizing the flow of silicon melt and allowing production of a large silicon single crystal free from uneven quality with a high productivity rate. This is not a teaching of the combination of all of the features positively recited in claim 25.

Further, to the extent that an inherency argument is being asserted, MPEP §2112 states that the Patent Office must provide a rationale or evidence tending to show inherency. Citing *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1990), MPEP §2112 states "[i]nherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Additionally, citing *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990), §2112 states, "[i]n relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows for the teaching of the applied prior art" (emphasis in original). The Office Action fails to comply with the standard set forth above in MPEP §2112 regarding the necessary showing

of inherency. The Office Action's conclusory statement that the magnetic field impressed to the crystal melt inherently satisfies the claimed method is insufficient. It should be noted that not every method of crystal growth results in $V_x F / \sin \theta$ being in a certain range when a growth rate at the time of growing a single crystal. Therefore, the feature $V_x F / \sin \theta$ being in a certain range has not been adequately shown to necessarily flow from the teachings of the references.

Further, the Office Action concedes that Fusegawa does not cure the deficiencies of Kishida with respect to claim 25.

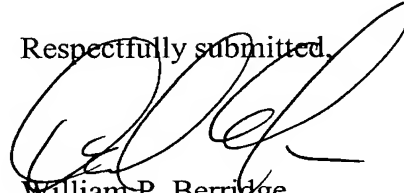
For at least the above reasons, the applied prior art references cannot reasonably be considered to teach, or to have suggested, the combinations of all of the features positively recited in at least independent claims 13 and 25. Further, claims 15, 17, 19, 21-24 and 26-32 would also not have been suggested by the applied prior art references for at least the respective dependence of these claims on allowable independent claims 13 and 25, as well as for the separately patentable subject matter that each of these claims recite.

Accordingly, reconsideration and withdrawal of the rejections of claims 13, 15, 17, 19 and 21-32 under 35 U.S.C. §102(b) and §103(a) as being anticipated by, or unpatentable over, the applied references, are respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 13, 15, 17, 19 and 21-32 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



William P. Berridge
Registration No. 30,024

Daniel A. Tanner, III
Registration No. 54,734

WPB:DAT:GMH/axl

Date: May 31, 2007

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
--